

REMARKS

The invention is directed at a warewashing detergent composition, a method of using a warewashing detergent composition, and a method of manufacturing a warewashing detergent composition. The detergent composition includes a corrosion inhibitor in an amount sufficient for reducing corrosion and/or etching of glass. The corrosion inhibitor includes a source of aluminum ion and a source of zinc ion, and the amount of the source of aluminum ion and the amount of the source of zinc ion are sufficient to provide a weight ratio of aluminum ion to zinc ion of between about 6:1 and about 1:20. The Applicants discovered that by controlling the ratio of the aluminum ion to the zinc ion in the use solution (the composition that contacts the ware), it is possible to provide reduced corrosion and/or etching of glass compared with the use of either component alone.

The outstanding Office Action includes two prior art-based rejections. Claims 1-37 stand rejected under 35 U.S.C. §103(a) over U.S. Patent No. 4,954,280 (*Elliott et al.*), and claims 1-37 stand rejected under 35 U.S.C. §103(a) over U.S. Patent No. 5,169,552 (*Wise*). These rejections are traversed.

Elliott et al. and *Wise* fail to disclose or suggest a warewashing detergent composition that includes a source of aluminum ion and a source of zinc ion in an amount sufficient to provide reduced corrosion and/or etching of glass compared to the use of either component alone according to the present invention. Furthermore, *Elliott et al.* and *Wise* fail to disclose or suggest providing the source of aluminum ion and the source of zinc ion in an amount sufficient to provide a weight ratio of aluminum ion to zinc ion of between about 6:1 and about 1:20 according to the present invention.

Elliott et al. disclose a stable liquid automatic dishwashing composition and a process for its preparation. The composition includes a swellable clay, a water-soluble polymer, and a multivalent cation in a ratio such that an enhanced rheological effect occurs with the polymer, clay, and multivalent metal ion in combination with hypochlorite ion at an appropriate pH. See *Elliott et al.* at column 2, lines 48-63, and the Abstract. It is submitted that *Elliott et al.* are not directed at providing a warewashing detergent composition that includes a corrosion inhibiting amount of a corrosion inhibitor including a source of aluminum ion and a source of zinc ion to provide a weight ratio of aluminum ion to zinc ion of between about 6:1 and about 1:20 according to the present invention.

The outstanding Office Action refers to *Elliott et al.* at column 11, table 3, for the disclosure of a composition containing "aluminum sulfate," and to the disclosure of *Elliott et al.* at column 16, claim 4, for the statement "said multivalent cation is selected from the group consisting of Al^{+3} , Zn^{+2} , Sn^{+4} and mixtures thereof." It is submitted that these portions of *Elliott et al.* would not have suggested a warewashing detergent composition including a corrosion inhibitor in amount sufficient for reducing corrosion and/or etching of glass according to the present invention where the corrosion inhibitor includes a source of aluminum ion and a source of zinc ion in amounts sufficient to provide a weight ratio of aluminum ion to zinc ion of between about 6:1 to about 1:20 according to the present invention.

The multivalent cation (such as aluminum (III) or chromium (III)) disclosed by *Elliott et al.* is provided to enhance the rheological properties of the cleaning liquids over those structured by polymer alone, clay alone, or polymer-clay combinations. The Examiner's attention is directed at *Elliott et al.* at column 3, lines 3-21. This is clearly not a suggestion by *Elliott et al.* to combine a source of aluminum ion and a source of zinc ion to provide a weight ratio of aluminum ion to zinc ion of between about 6:1 and about 1:20 to provide reduced corrosion and/or etching of glass compared with the use of either component alone. *Elliott et al.* are not concerned with reducing the etching of glass, and clearly do not suggest combining a source of aluminum ion and a source of zinc ion to address glass etch problems.

The above-identified patent application shows the effect on reducing corrosion and/or etching of glass by using a corrosion inhibitor that includes a source of aluminum ion and a source of zinc ion according to the present invention. The Examiner's attention is directed to examples 1-9 on pages 21-27 of the above-identified patent application. Clearly, the above-identified patent application demonstrates the corrosion and/or etching reduction provided as a result of utilizing a corrosion inhibitor according to the present invention. *Elliott et al.* fail to recognize that a warewashing detergent composition can achieve increased reduction of corrosion and/or etching of glass when utilizing a corrosion inhibitor that includes a source of aluminum ion and a source of zinc ion in amounts sufficient to provide a weight ratio of aluminum ion to zinc ion of between about 6:1 to and about 1:20. Accordingly, one having ordinary skill in the art would not have received a suggestion to modify *Elliott et al.* to achieve the presently claimed invention.

In view of the above comments, withdrawal of the rejection over *Elliott et al.* is requested.

Wise is directed at a liquid cleaning composition displaying enhanced physical stability that includes a chlorine bleach ingredient, a cross-linked polycarboxylate polymer thickening agent, a rheology stabilizing agent, and alkalinity. See *Wise* at column 1, lines 42-64, and the abstract. It is submitted that *Wise* fails to disclose or suggest providing a warewashing detergent composition that includes a corrosion inhibitor in an amount sufficient to provide reduced corrosion and/or etching of glass, and including a source of aluminum ion and a source of zinc ion in an amount sufficient to provide a weight ratio of aluminum ion to zinc ion of between about 6:1 and about 1:20 according to the present invention.

The outstanding Office Action refers to *Wise* at Example I in column 12 for the disclosure of a composition containing sodium aluminate, and to Example IV in column 15 for the disclosure of a composition containing potassium zincate. The outstanding Office Action recognizes that *Wise* fails to disclose using a combination of zinc ion and aluminum ion. The outstanding Office Action, however, concludes that it would have been obvious from *Wise* to provide a composition that includes both aluminum ion and zinc ion without offering any explanation.

It is pointed out that *Wise* discloses the use of 0.03 wt.% sodium aluminate in the composition of Example I (column 12) and discloses the use of 0.03 wt.% potassium zincate in Example IV (column 15). There is no recognition by *Wise* that such small amounts of sodium aluminate and potassium zincate, even if the components were combined, would provide a corrosion inhibiting effective amount for reducing corrosion and/or etching of glass. Quite simply, *Wise* is not directed at reducing etching and/or corrosion of glass and would not have suggested combining sodium aluminate and potassium zincate to achieve reduced corrosion and/or etching of glass. Instead, *Wise* is concerned with providing a liquid cleaning composition that exhibits shear thinning behavior (high viscosity at low rates of shear and lower viscosities at high rates of shear). See *Wise* at column 1, lines 9-18.

The Examiner's attention is directed to *Wise* at column 10, lines 59-65, for the disclosure of several metalates of amphoteric metals. It is understood that the purpose of the metalates of amphoteric metals is to provide "additional structuring to the polycarboxylate polymer thickening agent." See *Wise* at column 10, lines 51-54. Clearly, there is no recognition by *Wise*

that aluminum ion and zinc ion can be provided in an amount and in a weight ratio according to the present invention to reduce corrosion and/or etching of glass in a warewashing detergent composition. In contrast, the inventors of the above-identified patent application discovered that by controlling the amount and the ratio of aluminum ion to zinc ion in a use solution, it is possible to provide reduced corrosion and/or etching of glassware and ceramics compared with the use of either component alone. This discovery is nowhere reported or suggested by *Wise*.

In view of the above comments, the present invention would not have been obvious from *Wise*, and withdrawal of the rejection over *Wise* is requested.

The outstanding Office Action includes an objection to claim 11. In view of the above amendment, it is believed that the objection has been rendered moot. Accordingly, withdrawal of the rejection is requested.

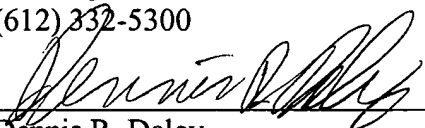
In view of the above comments, it is believed that this application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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